AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-8.   (cancelled)

9.   (new) A method for monitoring an exhaust system of a motor vehicle having an internal combustion engine (1) and having monitoring electronics (7), a temperature sensor (6) for measuring an outlet-side exhaust-gas temperature (T2) being arranged at the outlet side (14) of an exhaust pipe section (15) which is intended to accommodate a component (4) with a purifying activity, and the monitoring electronics (7) compare a time curve of the outlet-side exhaust-gas temperature (T2) with a time curve of an inlet-side exhaust-gas temperature (T1) at the inlet side (13) of the exhaust pipe section (15), wherein the comparison comprises forming a time derivative.

10.   (new) The method as claimed in claim 9, wherein the monitoring electronics (7) determine the time derivatives $(dT1/dt)$ and $(dT2/dt)$ of the inlet-side exhaust-gas temperature (T1) and the outlet-side exhaust-gas temperature (T2), and the difference $(dT1/dt - dT2/dt)$ between the derivatives.

11.   (new) The method as claimed in claim 10, wherein the monitoring electronics (7) generate a signal which indicates the absence of the component (4) with a purifying activity or the presence of an incorrect component if the difference $(dT1/dt - dT2/dt)$ between the derivatives is within a predetermined range of values.

12.   (new) The method as claimed in claim 10, wherein the monitoring electronics (7) generate a signal which indicates the absence of the component (4) with a purifying activity or the presence of an incorrect component if the

difference $(dT1/dt - dT2/dt)$ between the derivatives is within a predetermined range of values and the time derivative $(dT1/dt)$ of the inlet-side exhaust-gas temperature $(T1)$ is outside a predetermined range of values.

13.   (new) The method as claimed in claim 9, wherein the monitoring electronics (7) determine the time derivatives $(dT1/dt)$ and $(dT2/dt)$ of the inlet-side exhaust-gas temperature $(T1)$ and the outlet-side exhaust-gas temperature $(T2)$, and also the time derivative $(dT2^*/dt)$ of a calculated value $(T2^*)$ for the exhaust-gas temperature at the outlet side (14) of the exhaust pipe section (15) and generate a signal which indicates the absence of the component (4) with a purifying activity or the presence of an incorrect component if the difference $(dT2^*/dt - dT2/dt)$ between the derivatives is outside a predetermined range of values and the time derivative $(dT1/dt)$ of the inlet-side exhaust-gas temperature $(T1)$ is outside a predetermined range of values.

14.   (new) A method for monitoring an exhaust system of a motor vehicle having an internal combustion engine (1) and having monitoring electronics (7), a temperature sensor (6) for measuring an outlet-side exhaust-gas temperature $(T2)$ being arranged at the outlet side (14) of an exhaust pipe section (15) which is intended to accommodate a component (4) with a purifying activity, and the monitoring electronics (7) compare a time curve of the outlet-side exhaust-gas temperature $(T2)$ with a time curve of a calculated value $(T2^*)$ for the exhaust-gas temperature at the outlet side (14) of the exhaust pipe section (15), wherein the calculated value $(T2^*)$ is determined on the basis of the heat-storing and/or fluid-dynamic action of the component (4) with a purifying activity.

15.   (new) The method as claimed in claim 14, wherein the monitoring electronics (7) determine the time derivatives $(dT2/dt)$ and $(dT2^*/dt)$ of the outlet-side exhaust-gas temperature $(T2)$ and of the calculated temperature $(T2^*)$ and the difference $(dT2^*/dt - dT2/dt)$ between the derivatives.

16.   (new) The method as claimed in claim 15, wherein the monitoring electronics (7) generate a signal which indicates the absence of the component (4) with a purifying activity or the presence of an incorrect component if the difference (dT2*/dt − dT2/dt) between the derivatives is outside a predetermined range of values.

17.   (new) The method as claimed in claim 14, wherein the monitoring electronics (7) determine the time derivative (dT1/dt) of an inlet-side exhaust-gas temperature (T1) at the inlet side (13) of the exhaust pipe section (15) and the time derivative (dT2/dt) of the outlet-side exhaust-gas temperature (T2), as well as the time derivative (dT2*/dt) of the calculated value (T2*) for the exhaust-gas temperature at the outlet side (14) of the exhaust pipe section (15) and generate a signal which indicates the absence of the component (4) with a purifying activity or the presence of an incorrect component if the difference (dT2*/dt − dT2/dt) between the derivatives is outside a predetermined range of values and the time derivative (dT1/dt) of the inlet-side exhaust-gas temperature (T1) is outside a predetermined range of values.